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Pending Railroad Legislation

BY RICHARD WATERMAN

Secretary, Railroad Committee Chamber of Commerce of the United States

Two general railroad bills are now before Congress—the Cummins bill, S. 3288, drafted by the Senate Committee on Interstate Commerce and introduced October 22, 1919, and the Esch bill drafted by the House Committee on Interstate and Foreign Commerce and introduced November 8, 1919. The two bills differ in many important particulars. The Esch bill was passed by the House of Representatives November 17, 1919, but the Cummins bill is still on the Senate calendar. It will probably be taken up for consideration as soon as the regular session of Congress opens December 1, 1919.

SENATE COMMITTEE RAILROAD BILL

The Cummins bill provides for:

Return of all railroad and transportation systems to corporate ownership and operation on the last day of the month in which the act is approved.

Consolidation of all railroad properties in accordance with a plan previously adopted by the Federal Transportation Board and approved by the Interstate Commerce Commission into 20 to 35 separate competing systems each owned and operated by a distinct federal corporation—consolidation to be voluntary if accomplished within 7 years and thereafter to be compulsory.

Federal incorporation of all railroads with a requirement that each corporation shall include in its Board of Directors 2 representatives of classified employes and 2 representatives of the Government.

Exclusive regulation and control by the Transportation Board of the issuance of stocks or bonds by railway or water common carriers; and of the purposes to which the proceeds of the sale of such securities may be applied.

Continuation of rates that are in effect at the termination of federal control until changed by competent authority.

Provision that new rate schedules filed with the Commission within 60 days after federal control ceases shall become effective within 4 months after they are so filed if approved by the Commission.

Requirement that the Commission shall divide the country into rate districts and the railway carriers into rate groups as an aid in determing the adequacy of rates in producing revenues.

Regulation of all rates that affect interstate commerce, of maximum and minimum rates and joint rates and of the division of joint rates, by the Interstate Commerce Commission under a statutory rule providing that the railway carriers as a whole in each rate-making district shall be allowed to earn an aggregate annual net railway operating income equal as nearly as may be to 5½ per cent upon the aggregate value of their property; and that they may be allowed to retain in addition ½ of 1 per cent to pay for non-productive improvements that cannot be capitalized. In 1923 and at intervals of 5 years thereafter the Interstate Commerce Commission shall have authority to increase or decrease the 5½ per cent basis.

Valuation by the Commission of the railway property used for transportation purposes in each rate-making district.

Creation by each road of an individual reserve fund, drawn from its excess earnings to support its own credit; and creation by all prosperous roads of a general contingent fund drawn from their excess earnings to support the credit of the railroads of the country as a whole.

Provision that the company reserve fund may be drawn upon by the carrier whenever its annual net operating income falls below 6 per cent of the value of the property. The general railroad contingent fund may be used by the Transportation Board in furthering the public service rendered by the carriers either by way of purchase, lease or rental of transportation equipment and facilities to be used by the carriers, or by way of loans to the carriers.

Consolidation of all railroads into 20 to 35 systems (whose capitalization in each instance shall not exceed the value of the property) so organized that, with uniform rates and under efficient management, each

can earn substantially the same rate of return on the value of its property.

Guarantee to all railroads, for 6 months after federal control ends, of an operating income equal to the standard return for the same period paid during federal control.

Extension of carrier indebtedness for capital expenditures made by the Government during federal control for a period of 10 years with interest at 6 per cent.

Creation of 3 Regional Boards of Adjustment, each composed of 6 members—3 representing labor and 3 the railway carriers—to hear and determine all complaints, grievances and disputes other than controversies relating to wages and working conditions; with appeal to the Committee of Wages and Working Conditions in case of a deadlock.

Creation of a Committee of Wages and Working Conditions composed of 8 members —4 representing labor and 4 the railway carriers—to have jurisdiction over controversies respecting wages and working conditions of employes; with appeal to the Transportation Board in case of a deadlock.

In determining the fairness, justice and reasonableness of wages and salaries the Board shall take into consideration (a) the scales of wages paid for similar kinds of work in other industries, (b) the relation between wages and the cost of living, (c) the hazards of employment, (d) the training and skill required, (e) the degree of responsibility, and (f) the character and regularity of the employment.

Declaration that decisions of the Transportation Board, i e., of the Government, shall be final; and that railroad strikes and lockouts are unlawful.

Maintenance of the Interstate Commerce Commission with authority

(1) to fix interstate rates that shall be just, reasonable and adequate;

(2) to determine the valuation of railroad properties;

(3) to prescribe uniform accounting systems for all carriers;

(4) to approve consolidations, and

(5) to exercise all of the other regulatory functions now exercised by the Commission excepting those transferred to the new Transportation Board.

Creation of a Transportation Board composed of 5 members appointed by the President:

(1) to prepare and adopt a complete plan for consolidation subject to the approval of the Commission;

(2) to make inquiry continuously concerning (a) the transportation facilities and service of the whole country and when and how they should be improved; (b) the state of the credit of all common carriers; and (c) the new capital which the public interest may require any carrier to secure;

(3) to represent the public interest in hearings before the Commission;

(4) to recommend to Congress from time to time such measures and policies as in its opinion will promote and protect the public interests;

(5) to exercise certain executive and administrative functions now exercised by the Commission including the administration of (a) the car service act; (b) the safety appliance acts; (c) the hours of service act; (d) the locomotive boiler inspection act, and others of like character;

(6) to provide when necessary for the redistribution of traffic and the joint use of terminal or other facilities;

(7) to exercise exclusive and plenary power over the issuance of securities by carriers;

(8) to serve as a Board of final appeal in labor controversies;

(9) to prepare and publish for the information of shippers the substance of all schedules of ocean going common carriers showing routes, sailing dates and rates charged by each carrier; and

(10) to exercise other important regulatory powers belonging to the Federal Government.

HOUSE RAILROAD BILL

The Esch bill provides for:

Return of all railroads and systems of transportation to private ownership and operation on the last day of the month in which the act is approved.

Consolidation, unification or merger by purchase, lease, stock control or in any other way of any two or more carriers, or the pooling of their traffic's earnings or facilities to the extent that the Commission indicates will be in the public interest.

Federal incorporation opposed because it may be unconstitutional and would probably entail large expense, litigation and delay.

Exclusive and plenary jurisdiction of the Interstate Commerce Commission over the issuance of stocks, bonds and other securities by any common carrier, the purpose of any proposed issue and the use of the proceeds thereof.

Continuation of rates that are in effect at the termination of federal control until changed by competent authority.

Creation of regions for incorporation, administration and rate making purposes opposed because it would limit competition and would make rate making based on average conditions of carriers within a given region an impossible task.

Regulation of all rates that affect interstate commerce, of maximum and minimum rates and joint rates, and of the division of joint rates, by the Interstate Commerce

Commission under the provisions of section 15 of the Act to Regulate Commerce as thus amended, without defining a new rule of rate-making.

Valuation by the Commission of all property owned or used by every common carrier (as provided in Section 19a of the Act to Regulate Commerce)

Creation by the Government of a $250,000,000 revolving fund from which carriers may obtain, during the first two years of resumed private operation, loans bearing 6 per cent interest and maturing in 5 years.

Consolidation of two or more railroads permitted whenever the Commission decides that it will be in the interest of better service or economy of operation.

Guarantee to all railroads, including short lines and express companies, for 6 months after federal control ends, of an operating income equal to the standard return for the same period paid during federal control on condition that carriers claiming the guaranty shall make application for any general rate increase desired within 60 days after the return of the carriers to private control.

Extension of carrier indebtedness to the Government, after the rental owned by the Government has been settled, for a period of 15 years at 6 per cent interest.

Creation of three boards of adjustment, each authorized to hear and decide all controversies between the railroads and certain classes of their employes with regard to wages, hours of service and conditions of employment; and three commissions on labor disputes to make final decisions on all matters referred to them by the three boards of adjustment—

Board of Adjustment No. 1, composed of eight members, four representing the engineers, firemen, conductors and trainmen, and four representing the railroad executives.

Commission on Labor Disputes No. 1, composed of eight members similarly chosen.

Board of Adjustment No. 2, composed of twelve members, six representing the machinists, boiler-makers, blacksmiths, carmen, sheet-metal workers and electrical workers, and six representing the executives.

Commission on Labor Disputes No. 2, composed of twelve members similarly chosen.

Board of Adjustment No. 3, composed of eight members, four representing the telegraphers, switchmen, clerks, and way and shop laborers, and four representing the executives.

Commission on Labor Disputes No. 3, composed of eight members similarly chosen.

Maintenance of the Interstate Commerce Commission, with 11 instead of 9 members, and with authority to exercise all of its present functions and in addition

(1) to keep itself informed as to the transportation needs, facilities and services of the carriers;

(2) to authorize the unification, consolidation or merger of 2 or more carriers whenever the Commission finds such consolidations to be in the public interest, and also to authorize the pooling of traffic earnings and facilities;

(3) to exercise jurisdiction over the use, control and supply as well as the movement, distribution and interchange of locomotives and cars and also the supply, movement and operation of trains;

(4) to prohibit the extension of present lines or the construction or acquisition of new lines by any carrier until it has obtained from the Commission a certificate of public necessity and convenience;

(5) to require the construction of docks and rail connections between rail and water carriers;

(6) to provide when necessary for the redistribution of traffic; and for the joint use of terminals;

(7) to exercise exclusive jurisdiction over the issuance of securities by carriers;

(8) to order a carrier to install automatic train stop or train control devices; and

(9) to exercise other important regulatory powers belonging to the Federal Government.

VIEWS OF BUSINESS MEN

The preparation of the Esch and the Cummins bills has involved an enormous amount of labor on the part of the Interstate Commerce Committees of both branches of Congress. For months at a time these Committees have held daily hearings and listened to advocates of almost every conceivable plan for the future disposal of the railroads. The Chamber of Commerce of the United States has been able to be of direct assistance to the two Congressional Committees in this work, first by formulating certain definite principles of railroad legislation, and then by submitting these principles to a referendum vote of the business men of the country.

The following is a summary of the nine principles approved by the business men in Referendum 28 of the Chamber of Commerce. All of these nine principles have been incorporated in the Senate bill and six of the nine in the House bill. The nine principles are:

(1) Adherence to the policy of corporate ownership and operation with comprehensive government regulation. (Senate and House bills.)

(2) Return of the roads to corporate operation as soon as remedial legislation can be enacted. (Senate and House bills.)

(3) No extension of the period of federal

control as now fixed. (Senate and House bills.)

(4) Permission for consolidation in the public interest, with prior approval by government authority (Senate and House bills) in a limited number of strong competing systems. (Senate bill.)

(5) Requirement that railroad companies engaging in interstate commerce become federal corporations with rights of taxation and police regulation reserved for the states. (Senate bill.)

(6) Exclusive federal regulation of capital expenditures and security issues of railroads engaged in interstate commerce with provision for notice and hearings for state authorities (Senate and House bills.)

(7) Federal regulation of interstate rates affecting interstate commerce. (Senate and House bills.)

(8) Adoption of a statutory rule providing that rates in each traffic section shall yield an adequate return on a fair value of the property as determined by public authority. (Senate bill.)

(9) Creation of a Federal Transportation Board to promote the development of a national system of rail, water and highway transportation and the articulation of all transportation facilities. (Senate bill.)

The Handling of Troops During the Great War

The Troop Movement Section, Division of Operation, United States Railroad Administration has had exclusive charge of this work since the beginning of Federal control and, under the different designations, handled it for the railroads prior to that time.

The prompt, efficient and safe movement of troops has been a first consideration throughout and nothing has been permitted to interfere with it.

To September 30th, 1919, there have been moved a total of 15,559,918 men, involving the equivalent of nearly seven billion miles of travel by one passenger.

The average is 536,549 men per month; the monthly maximum was reached in July, 1918, when 1,147,013 men were moved.

There have been 25,676 special trains operated—the monthly maximum was 2,055 trains in July, 1918.

These special trains averaged:

426 men per train
761 miles traveled per train
21 miles per hour (time over all)
12 cars per train.

A total of 293,770 passenger cars (including sleeping cars), 22,956 baggage cars and 25,719 special freight cars for troop impedimenta, total 342,445 cars have been used.

Classification of Troop Movements

The movement of troops with their impedimenta and of selective draft men and recruits may be generally divided as follows:

1. The movement of the Regular Army to its Increment camps.
2. The movement of the National Guard to its camps.
3. The movement of the National Army from their homes to their cantonments.
4. The movement of men from one camp to another camp to meet the needs of the service.
5. The movement of men from the camps to Ports of Embarkation.
6. The movement of the discharged men, who had not been sent abroad, to their home stations, after the signing of the armistice
7. The movement of the men from the Ports upon their return to this country to their camps for discharge and after discharge to their home stations.
8. The movement of the sick and wounded from the Ports to the various hospitals throughout the country.

In addition to these there has been a constant stream of recruits moving from depots to camps and continuous movements of bodies of organized troops to camps or ports.

On April 1st, 1917, the Regular Army numbered 133,000 men, with possible war strength of 250,000.

The National Guard numbered approximately 150,000 but after recruiting the number actually moved was 343,223 men.

There were called to the colors approximately 4,000,000 men (including the draft men sent to Colleges for technical training)

The movement of the Regular Army to Increment camps was performed with great ease by reason of the relatively small number of men involved and their experience in travel.

Immediately after the declaration of War, quite a large number of National Guard were moved to guard the railroad bridges, tunnels, ammunition plants and large industries engaged in war work.

There were established sixteen cantonments at which the National Guard were finally assembled, in some cases necessitating long journeys, as for illustration, from the States of North Dakota and Minnesota, on

the Canadian border, to Camp Cody, Deming, New Mexico, on the Mexican border; also from Washington and Oregon to Camp Greene, Charlotte, North Carolina.

In moving the National Guard to their cantonments, it necessitated elaborate schedules and train movements being planned to first bring a regiment together, before departing on its long journey to the Southern camps.

Relative to the movement of the National Army, for whom an additional sixteen cantonments had to be provided, the Provost Marshal General in his report states: "No more difficult transportation problem could be conceived. Small groups were to be assembled in each county seat in the United States, entrained and transported in converging contingents to sixteen separate destinations, sometimes a thousand miles from their points of origin. The smoothness and dispatch with which this problem was solved was nothing short of marvelous. Whatever of uncertainty and lack of co-ordination may yet remain in the adjustment of our peace time facilities to the uses of war, it must be said that the railroads' handling of selected men could not have been bettered had it resulted from a military experience of a decade."

The drafted men were gathered up, originating at more than 4,500 points, located in every county of every State. To do this, involved scheduling each movement of each train, regular or special, on which any of these men traveled. These schedules when prepared were placed in the hands not only of the railroads concerned, but also in the possession of everyone of the local draft boards at points of origin.

All suggestions as to dates were accepted by the War Department. When these dates were set all details were turned over to us. The schedules were prepared by the several passenger associations, and a competent representative was placed by the association in the office of the Governor or Adjutant General of each State during the movement, to adjust any difficulties that might present themselves.

The railroads also were obliged to undertake the feeding of these men. This was done in some cases by using dining cars, in others in eating houses, and in others, by supplying lunches on the trains.

The movement of these drafted men involved in some instances a distance as great as 1,100 miles.

The average distance was 388 miles.

The total number of men inducted under the draft was 2,810 296.

The maximum number in any one month was 400 000· the maximum number of any one day 50,000 men.

Of the drafted men, the largest number sent to one camp was 138,349, to Camp Lee, Petersburg, Va.

The special draft calls for men sent to various schools for technical training and otherwise, totaled 269,857.

The movement of drafted men involved the equivalent of 1,069,124,688 miles of travel by one passenger.

Almost immediately upon the arrival of the National Army at its camps, there began an inter-camp movement of large proportions. During a portion of this time organizations of the National Guard were also moving south. It was therefore frequently necessary to make suggestions as to appropriate dates for such movements to avoid over-crowding of roads and gateways. These suggestions were cordially accepted.

Extremely heavy demands were made upon the railroads by the furloughs granted at the Divisional Camps.

In many instances thousands have been furloughed for Saturdays or Sundays, and at Thanksgiving and at Christmas the number of men on leave was well above 250,000 in each case. The requirements in power to meet this has been serious in its effect.

The movement to the Ports of Embarkation for overseas service involved less than 200,000 men up to December 31st, 1917.

In January, February and March, 1918, a total of 150,000.

In April, 120,000; May 220,000 and June, July, and August, nearly 900,000 men.

The total number moved to the ports for overseas movement was approximately 2,100,000

The maximum in any one month being 306,741 men reached in August, 1918.

Entire Army Divisions of approximately 28,000 men were moved at one time from their camps to ports of embarkation for overseas service, and frequently two or more divisions were moving at the same time.

A complete Division was entrained and started to the Ports frequently in less than six days

To move a Division required·

62 trains
707 Pullman sleeping cars or
622 coaches
62 baggage cars for kitchen purposes
62 baggage cars for baggage, etc.

The greatest distance covered by these large movements was from the Pacific Coast, Camp Kearny, California, Camp Fremont, California, and Camp Lewis, Washington, to the Port of New York, the distance from each camp being approximately 3,500 miles

Immediately upon the signing of the armistice on November 11th, 1918, plans began to be made to demobilize as many as possible of the two million men who had not gone overseas. These men were dis-

charged from the camps at which they were located, being given cash allowance for their travel home.

Daily lists were prepared in advance of the men to be discharged showing their destinations, ticket offices were established in the camps and all necessary arrangements were made for extra equipment on regular trains and special trains for their prompt and comfortable movement.

Plans were also made for the early return of troops from overseas. The overseas return movement up to September 30th, 1919, was 1,965,676, the largest number having been reached in the month of June, 1919, 342,686, and which exceeds by practically 36,000 the greatest number sent overseas in any one month.

Upon the arrival of these returned men at the American Ports, they are immediately sent to the camps in the vicinity thereof, and after proper sanitary conditions are applied, medical examinations and proper records made, they are promptly transported to the camps nearest their homes for demobilization.

In the movements from the Port camps, arrangements are frequently made for parade enroute, which naturally slows up the transportation movements.

Of the sick and wounded, there have been a total of 150,000 men moved from the ports to the various hospitals, etc., throughout the country, and for which most careful preparations and the best possible service have been arranged.

There are four complete hospital trains of seven cars each, with a kitchen car with capacity to prepare special meals required for as many as 250 men.

In addition there are provided twenty new unit cars each with kitchen facilities to feed 250 people, and which are used in connection with trains made up of Pullman cars.

There are also seventeen Pullman private cars with kitchens, and 150 Pullman sleeping cars, making a total of 215 specially assigned cars for this service.

Every possible consideration is given the movement of these sick and wounded men.

Solid trains have been run from New York as far as Camp Kearny, California, and Camp Lewis, Washington, which movements were given publicity through the press and on the picture screens.

The maximum amount of equipment which has been available or required for troop movements at any one time is approximately as follows:

1500 Pullman sleeping cars
2500 coaches
500 baggage and express cars

On September 30th, 1919, approximately 90 per cent or 3,675,000 men have been released from service and returned to their homes.

There were still in Europe or on the sea enroute home approximately 35,000 men.

There have been on the sea enroute home over 170,000 at one time.

Total number still in service approximately 350,000 men.

Cooperation Among Railroads

HAROLD A. MATTICE

Reference Librarian, Bureau of Railway Economics

When the Railroad Administration entered upon its duties it found the railroads of the country already operating practically as one system, and its activities have been mainly along lines forbidden by law to the carriers themselves. How over 850 companies operating 250,000 miles of line came to be so united that it is possible to ship through freight or buy a through ticket from almost any point in the country to any other, according to a rate set forth in print, is the story of cooperation among business rivals. The result was not accomplished in a day, and has cost much money and effort, but the roads were forced to it by the ruinous result of competition wherever it was unchecked, and by the proven value of cooperation. If railroad men had not learned this lesson nothing like our present system could ever have come into existence.

The early roads were not in competition and paid little attention to each other. Each served a limited territory and there were few junction points. When lines began to meet there were at first no arrangements for the through routing of freight or passengers, and no line was under any obligation to do anything for any other. For example, in the early fifties there were ten lines between Albany and Buffalo. Conductors were changed at each junction, and in some cases it was impossible to buy a through ticket.

The evils of unrestricted competition were not long in appearing, and all the familiar symptoms were evident at once A perusal of the eight days' deliberations of the representatives of nineteen New England roads in Boston, Dec. 1850-Jan. 1851, leaves little to be learned about the subject from later records. The familiar charges of rebating

were exchanged; secret rebating to small shippers in the form of free drayage, open rebating to large shippers, with the added information that the practice had been brought from England. The familiar remedies were proposed, rate agreements and the pooling of traffic and profits.

There were other conventions that discussed other matters of common interest. On Aug. 24-25, 1852, there was a general railroad convention at Springfield, Mass., to consider uniform train rules, exchange of reports, time-tables, and like matters. The Ohio railroad convention met annually in the early fifties and was deeply interested in the abuse of passes. Several important conventions met in 1863 in cities of New York state, which resulted in improved arrangements for through tickets among forty-eight roads, and in the establishment of what was probably the first union ticket office, at the corner of Broad and Spring streets, New York, on May first, 1863. A convention was held at Cleveland on Nov. 28, 1854, by the representatives of thirty-one roads. Joint tariffs and classifications were made public, together with an interesting plea for an advance in rates.

The next really important step was the coalition of many small roads into systems during the early fifties. The New York Central consolidated eleven lines in 1853, and the Pennsylvania followed a similar development. As was to be expected, the interests of these large lines soon came into collision, and the situation became accute when the New York Central; the Pennsylvania, the Erie and the Baltimore & Ohio obtained through lines from the middle west to the Atlantic seaboard, and began to compete for the vast new business. In 1854, according to President Thomson of the Pennsylvania, "a free interchange of opinions took place" with a view to "preventing ruinous competition." In 1858 he reported that an agreement had been signed by the presidents of the four trunk lines

In these agreements is to be seen the origin of the modern traffic association, but it was not until 1870 that a successful one was established. This was the so-called Omaha pool, formed by the Northwestern, the Rock Island and the Burlington. These evenly-matched rivals found themselves in competition for the traffic between Chicago and Omaha, and realizing that a rate war would be disasterous, decided to divide the business. A money-pool was formed; the traffic was divided as evenly as possible, each road retaining about half the proceeds. The remainder went into the general fund for equal distribution. This organization continued until 1882, when it became part of the Western Freight Association.

The next development was in the south Progress was slow after the Civil War; the country was poor and over-supplied with railroads. In consequence there was ruinous competition and the roads became practically valueless to their owners. There was universal rebating and rate-cutting in spite of some agreements between managers, made, it has been said, "with the purpose merely of practicing deception upon each other." After several attempts at a general plan, a working agreement was reached in 1873 by the lines competing between Atlanta and the seaboard. This was the Southern Railway and Steamship Association, soon to include about thirty companies. Its leader was Mr. Albert Fink, one of the greatest of our railroad men. The example of this organization strongly influenced the whole movement in this country. Its success was due to an adequate structure and to the fact that its officers had authority to enforce the rules.

The object of the association was so to control competition as to stop rebates and rate-cutting with their disasterous results. Traffic was in the hands of the executive committee, and there were sub-committees for special lines of work. For involved disputes there was a board of three permanent arbitrators. Each carrier had a fixed proportion of business assigned to it. Any exeecss of receipts was turned into the general fund after a small deduction for services This fund was divided proportionally. so that those roads profited who had not received their share of traffic. Healthy competition continued in the matter of getting business by fair methods, since a line making an advance one year could claim a larger share the next. The trend of rates was generally downward, and in this, as in improved service, the public was the gainer. An early offshoot was the Southern Passenger Association, which has always been closely associated with the older organization. Not the least of the accomplishments of the Southern Railway and Steamship Association was the Southern Classification, uniform for the territory south of the Potomac and Ohio and east of the Mississippi.

In the seventies and eighties there was a great extension of the traffic associations, and practically every road was drawn into one or more of them. This period is also the stormy one in our transportation history. Rate-wars were frequent and disasterous, and rebating a common evil. From all of this it might be deduced that the traffic associations were a failure, but the influence of the associations were always against these things, and as they grew stronger the evils decreased. How much worse things might have been but for the restraint from cooperative effort no one knows. During all this period of turmoil the railroad men were learning the advantages of consulting the common interest.

With the passage of the Interstate Commerce Act in 1887 the traffic associations were forced to enter upon an entirely new course. The Anti-Trust Law and decisions of the courts compelled still further changes. All pools and rate-agreements became illegal practices, but the usefulness of the associations increased rather than diminished. The almost incredible amount of railroad law on the statute books, together with the supervisory activities of the Interstate Commerce Commission and the numerous state commissions, has brought about a situation too complex for the railroads to cope with as individuals. The associations have undergone complete reorganization, but their activities have broadened to include practically everything that has to do with railroads.

The modern associations fall into four main classes: freight and passenger, classification, car-service, and technical.

The freight and passenger associations are classed together because they function in a similar manner. The members bind themselves to notify each other through the association of any contemplated change in rates or rules, and to give opportunity for exchange of opinion. Each road is absolutely free to make any changes it sees fit, and there is no authority to compel agreement on any subject. Besides serving as a clearing-house for the exchange of opinion, the officers of the association compile and publish the joint-tariff books. These are distributed to the members and to shippers.

The classification associations compile and publish lists showing every conceivable article that can be shipped, each in its proper class. Continual revision and enlargement is necessary, and the Interstate Commerce Commission insists that every distinction must be for a definite reason based on the service required. The interstate traffic of the whole country is under three classifications, the Official, the Southern and the Western. As a service to carriers and shippers there is hardly a more valuable result of cooperation. It may be asked why cooperation is not carried a step further and the three reduced to one. The answer is found in the fact that products and the practices of shippers in the three sections are so different that unification would serve no useful purpose, though the subject has been carefully considered

The technical associations have had an influence that is hard to measure. Officials interested in every important specialty have formed societies which hold meetings, exchange views, and publish their proceedings and technical papers. In this way the best ideas are constantly being made public and circulated. A strong influence is always at work toward the best and most economical practices. The American Railway Association, the best known of these societies, has recently amalgamated with seven technical organizations to form the new American Railroad Association. It is expected that by thus unifying efforts greater cooperation may be obtained.

It is hoped that in this very superficial consideration of the large subject of railroad cooperation some idea has been given of the results so far obtained, and of their importance to one of the most vital of our industries. We seem to be about to begin a new chapter of our railroad history, and all depends on legislation now pending in Congress.

The Progress of Transportation by Rail As Shown in Contemporary Documents

COMPILED BY ELIZABETH O. CULLEN

Of the Bureau of Railway Economics Library

The first railroads were built to facilitate the hauling of coal from mines to the River Tyne in England.

1630. "...The manner of carriage is, by laying rails of timber from the colliery down to the river exactly straight and parallel, and bulky carts are made with four rowlets fitting these rails, whereby the carriage is so easy that one horse will draw some four or five chaldron of coals, and is an immense benefit to the coal merchants..."

From Roger North's Life of Lord Keeper Guilford, 1676

One and three-quarters centuries later occurred the *first* discussion of the railroad problem in America.

1808 "...It has, however, occurred to me, that a few remarks upon rail roads might not be unacceptable to you, especially as the public attention has been often called to this sort of improvement, and the public mind filled with very imperfect conceptions of its utility....The astonishing loads drawn upon rail roads by single horses in England, have induced many of our citizens to hope for their early application to the use of our

country. I fear this hope is vain, excepting on a very small scale, and that chiefly in the coal country near Richmond. For it is evident that upon a rail road no other carriage but that which is expressly constructed for the purpose can be employed,—and that to render a rail road sufficiently saving of the expense of common carriage, to justify the cost of its erection, there must be a very great demand for its use. But the sort of produce which is carried to our markets is collected from such scattered points, and comes by such a diversity of routes, that rail roads are out of the question as to the carriage of common articles. Rail roads leading from the coal mines to the margin of the James River, might answer their expense, or others from the marble quarries near Philadelphia to the Schuylkill. But these are the only instances within my knowledge, in which they at present might be employed.

There is, however, a use for rail roads as a temporary means of overcoming the most difficult parts of artificial navigation, and for this use they are invaluable, and in many instances offer the means of accomplishing distant lines of communication which might otherwise remain impracticable, even to our national resources, for centuries to come."

B. H. Latrobe, in postcript to a letter to Albert Gallatin, Secretary of the Treasury, U. S. A., March 16, 1808. Letter printed in Gallatin's Report on internal improvements, April 12, 1808.

A gentleman from Hoboken argues for the adoption of steam railroads in the improvement of internal communications in America.

1812. "...So many and so important are the advantages which these states would derive from the general adoption of the proposed railways, that they ought, in my humble opinion, to become an object of primary attention to the national government. The insignificant sum of two or three thousand dollars would be adequate to give the project a fair trial...

But the attention of the general government is urged more imperatively to this object, from the consideration of its great national importance in a fiscal point of view. If any reliance can be placed on the calculations I have made, the revenue which this mode of transportation, when brought into general use, would be capable of producing, would far exceed the aggregate amount of duties on foreign importations. .

The far greater part of domestic commerce consists of bulky articles, many of which *now* pay fifty per cent. on transportation to market. By the introduction of the proposed railways, nine-tenths at least of this enormous tax would in many instances be saved, and the expense of transportation reduced from fifty to five per cent

The extension and completion of the main arteries of such a system of communication would by no means be a work of time... Requiring no supply of water—no precision and accuracy in leveling, the work could be commenced and carried on in various parts; its progress would be rapid and its completion could be ascertained with certainty...

The celerity of communication it would afford with the distant sections of our wide extended empire, is a consideration of the utmost moment. To the rapidity of the motion of a steam carriage on these railways no definite limit can be set.. I can see nothing to hinder a steam carriage from moving on these ways with a velocity of one hundred miles an hour... It is probable that it may not in practice be convenient to exceed twenty or thirty miles per hour. Actual experiments, however, can alone determine the matter, and I should not be surprised at seeing steam-carriages propelled at the rate of forty or fifty miles an hour ..

In a military point of view, the advantages resulting from the establishment of these railways and steam carriages would be incalculable. It would render at once our frontiers on every side invulnerable Armies could be conveyed in twenty-four hours a greater distance than it would now take them weeks, or perhaps months, to march...

Whatever Constitutional doubts may be entertained respecting the power of Congress to cut and form canals, there can be none about the power to lay out and make roads..."

John Stevens, in Documents Tending to Prove the Superior Advantages of Railways and Steam Carriages Over Canal Navigation. New York, 1812.

The first American railroad project meets with success.

1827-1830. "...The government of the United States justly appreciating the importance of this enterprise, have extended to it a most liberal patronage. Several able and efficient members of the Topographical Corps have been detached to the services of the company. These officers have examined various routes from the city of Baltimore to the valley of the Potomac, and along that ravine as far as Cumberland. They are now engaged in a general reconnaissance of the country between the Potomac and Ohio rivers, and are expected to return in a few weeks, prepared to lay before the board the result of their labors. Should a chief engineer by that time have been engaged, the board entertain the hope, that they will soon after, be ready to commence the actual location and construction of the road

The directors take great pleasure in acknowledging the general approbation and good will with which this enterprise is regarded throughout the country . . They have received communications from almost-

every district between this city and Ohio, as well as from many parts of that flourishing state, giving assurances of a cordial desire to afford the company every aid and support; and of a general willingness on the part of landholders, to relinquish the ground necessary for the road, free of cost.

In conclusion, the board feel a high satisfaction in stating, as the result of all the information and experience they have yet acquired, that their confidence in the practicability of the Rail Road, remains unabated, and that they believe the most sanguine calculations of its importance and utility, whether the object be regarded with reference to its national and local advantages, or, its profits to the stockholders, will be realized"

From First Annual Report of the Directors to the Stockholders of the Baltimore and Ohio Railroad Company, October 1, 1827.

"...At the time of their first and second annual reports, the Board were engaged in obtaining preparatory information, and making the necessary arrangements for commencing the construction of the road. The third annual report found them employed in overcoming the great, and, in the opinion of many, insurmountable obstacles which had occurred upon the sections between the city of Baltimore and the Patapsco river. The present report will convey to the Stockholders the gratifying information, that all these difficulties have been subdued; and that the company, as well as the community, are now in the enjoyment of the profitable and useful results which have followed the completion of the first division of the road. It is, therefore, with feelings of highest satisfaction, that the Board submit their Fourth Annual Report.....

The first division of the road was opened for the transportation of passengers on the 22d of May 1830.....but the preparation of the necessary Cars was not effected until the early part of June following, from which time, the travelling upon this division, including a distance of about 13 miles, has been constant and uninterrupted; and, on the first of October there had been received twenty thousand and twelve dollars and thirty-six cents, although but a single track was completed, and the company were not in a situation, until within a short time past, to undertake the transportation of any merchandise or produce, and are still unable to convey one-tenth part of the quantity that is offered....."

From the Fourth Annual Report of the President and Directors to the Stockholders of the Baltimore and Ohio Railroad Company, October 11, 1830.

Among the earliest advocates of "Safety First" on railroads was the London Quarterly review.

1825. "What can be more palpably absurd and ridiculous than the prospect held out of locomotives travelling *twice as fast* as stage-coaches! We should as soon expect the people of Woolwich to suffer themselves to be fired off upon one of Congreve's ricochet rockets, as trust themselves to the mercy of such a machine, going at such a rate ..... We trust that Parliament will, in all railways it may sanction, limit the speed to *eight or nine miles an hour*, which we entirely agree with Mr. Sylvester is as great as can be ventured on with safety."

Quarterly review, March, 1825.

Despite the Quarterly's scepticism as to their utility, Chief Engineer Knight of the B. & O adopted steam engines as the motive power of that road.

1830 "Experience, with regard to the celerity of the conveyance of passengers during the preceding four months on the first 13 miles of the Baltimore and Ohio Rail Road, is of the most cheering and convincing character The practicability of maintaining a speed of 10 miles per hour *with horses* has been exhibited...The load for a horse on the Rail Way, will be one car carrying 25 passengers, with a relay every six or seven miles.....

Within the last few months, the improvements in Locomotive Steam Engines have been such as to insure their general use on all Rail Ways of suitable graduation.. ..

With locomotives, the transportation of commodities may proceed with the same velocity as the conveyance of persons with very little, if any increased expense.—This arrangement will add immensely to the capacity of the road, while it will greatly lessen the number of engines, wagons, and men, necessary to be employed. The movement may be from 10 to 15 miles per hour, so as to average 10 miles including all stoppages....."

From Engineer's Report (Jonathan Knight, Chief Engineer) included in Fourth Annual Report...of the Baltimore and Ohio Rail Road Company, 1830.

Early railroad operation and improvements in New York State.

1832. "Yesterday evening the passengers on this road were brought down the inclined plane to Franklin street, and during the remainder of the season, they will start from that place. The inclined plane is about three-fourths of a mile long, and the cars pass it in about four minutes. The company has erected a large house to shelter the cars, and an office at the termination, and made a good road to that point for hacks and coaches. The English Engine is doing all the business, the American has not yet

been used, but will be in a few days. The passengers are taken across the road for five shillings each, and they average four to five hundred a day.—This rate will give about fourteen per cent. on the capital."

Article in American Railroad Journal, for May 19, 1832, dated Albany, May 15.—Mohawk Railroad [i. e. Mohawk and Hudson railroad]

"Down in the South" was built the first American railroad that actually began operations with steam locomotives.

1834. "...In the motive power of the Company, the stockholders recommended a gradual increase; and the Direction have in conformity, ordered four English Steam Cars, in addition to those last reported, making in all eight English Engines, received under contract. Of those contracted for at that time all have been received, except two English Engines, constructed by Mr. E. Berry, and they may be expected shortly as they were to have been shipped on the 10th of April...

The Road having been completed in November last, and none of the new steam cars having been then received, the Direction were under the painful necessity of declining the rich harvest of freight, which was urged on them at that time. Even the still more profitable transportation of Passengers was lost in a great degree by the same circumstance, and by the unfinished, and unfurnished condition of Public Houses along the line of Road...

In August last, a letter was written to the Post Office Department, in Washington, offering to transport the mails. . No answer was returned to this offer, and on the 5th of April another letter was written recalling that offer. In consequence of this, an application from the Post Office Department, has been received, calling for proposals, and although, the tenor of that communication, is not in accordance with the character and advantages of the conveyance tendered; still the confident belief is entertained that an arrangement must ere long be effected which will be alike advantageous to the Company, to the government, and to the community. The Company now sends an express daily from one commercial city to another, distant 136 miles, in 12 hours, and that in the day time. The daily papers of this city, are sent by this conveyance, but merchants' letters of the utmost importance to them in business, are not less than two days going under contract. Letters are sometimes lost, and the mail robbed in its present course. No such losses can be possible, when the mail is carried by a steam car, guarded by a host of passengers and attendants. The community have a right to expect from the government, that every possible facility should be afforded to their commercial interests...."

From Annual report of the Direction of the South Carolina Canal and Rail Road Company, May 6th, 1834.

And "down in the South" two years later, influential citizens argued: Build a railroad through to the Northwest and preserve slavery!

1836. "...The charter declares, that it shall run through South Carolina, North Carolina, Tennessee and Kentucky, having its southern terminus on the ocean at Charleston, and the northern point, before it branches, between the Cumberland mountains and Kentucky river; and thence extending to Maysville, Cincinnati and Louisville.....

...At Cincinnati, we shall unite with a Rail Road leading to Springfield, and thence to Sandusky, and thus there will be in this direction a continuous line of Rail Road from the Atlantic Ocean to Lake Erie. On the road from Lexington to Louisville, a lateral branch of 20 miles to Madison would connect ours with the Rail Road from that place to Lake Michigan.....The two great Lakes and the extensive regions around them, although one thousand miles from the southern Atlantic, will thus be connected with it at Charleston.....

The striking peculiarity of our road is that, unlike all those which unite the East and West, it will embrace every variety of climate and production (except sugar,) which blesses our wide extended country. It is, therefore, capable of sustaining a vast internal trade, in agricultural exchanges, and in time of war, would be more productive than in time of peace. It would then also possess this additional advantage, that when the Northwest has become an extensively manufacturing country, to which it is fast advancing, our road would be the channel of exclusive supply to the South of these articles, when a hostile fleet might prevent their importation from the North and East.....

I have thus far confined myself to the commercial advantages of this road. A more enlarged view would embrace its social and political relations. But want of time compels me to leave these to the suggestion of your own minds, except in one particular.....It is the influence this road will have in securing the stability of the institutions peculiar to the South. The Northwest can have no foreign commerce, but through other parts of the union: and from her peculiar situation and the character of her climate and soil, she must be dependent for her prosperity and wealth chiefly on her agriculture.....The Southern States, from the character of their labor and the nature of their great staple productions must continue planting States, in

which it will be more for their interests .....to buy their provisions, than to raise them. It is in the Southern States, therefore, that the Northwest will always find her best and often her only market..... This is known and felt throughout the whole region of the .Northwest. Every farmer there understands that his prosperity depends on finding an outlet to the South for the produce of his farm. And he feels and knows, that when abolitionism has swept over this region.....the sources of his wealth will be dried up. The people of the Northwest are too well informed to doubt on the subject. Any attempt to disturb the present state of things, whether it is to end as it most likely will, in a severance of the union, or in emancipation, will give the death-blow to their prosperity.....

It is to the Northwest, therefore that the South must look for steady support when the hour of trial comes, and there she may look with confidence.....

The Mississippi already, opens a channel of mutual exchanges between the Northwest and the South, which has done much to bind the two people together and render more secure our peculiar institutions. But "to make the assurance doubly sure" our road is wanted.....Make it.....and you have bound the Northwest still stronger to you, and may rest assured, that your institutions are secure, your property safe, and that your repose will not be disturbed....."

From Address of Col. A. Blanding, to the citizens of Charleston convened in town meeting, on the Louisville, Cincinnati and Charleston Rail Road. Columbia, S. C., May 14th, 1836

Enter—the era of consolidation.

1853. "Agreement made this seventeenth day of May, in the year one thousand eight hundred and fifty-three, Between the Albany and Schenectady Rail Road Company, the Schenectady and Troy Rail Road Company, the Utica and Schenectady Rail Road Company, the Mohawk Valley Rail Road Company, the Syracuse and Utica Rail Road Company, the Syracuse and Utica Direct Rail Road Company, the Rochester and Syracuse Rail Road Company, the Buffalo and Rochester Rail Road Company, the Rochester, Lockport and Niagara Falls Rail Road Company, and the Buffalo and Lockport Rail Road Company, all bodies corporate existing under the laws of the State of New York.

Whereas, by an act of the Legislature of the said State of New York, passed on the second day of April, one thousand eight hundred and fifty-three, entitled "an act to authorize the consolidation of certain rail road companies," the several companies above named or any two or more of them were thereby authorized at any time to consolidate such companies into a single corporation, in the manner therein mentioned, as on reference to the said act will more fully appear.

And whereas, negotiations have heretofore been entered into by and between the said several companies, for the purpose of effecting their consolidation into a single corporation as authorized by the said act of the Legislature, and the same has been agreed upon, on the terms and conditions hereinafter mentioned and contained.

Now, therefore, this agreement made by and between the several companies above named, under and in virtue of the authority conferred upon them by the act of the Legislature aforesaid, Witnesseth, That the said several companies herein before named, do agree, and each for itself severally doth hereby agree, that the several companies or bodies shall be consolidated into and form one corporation, under the name of

THE NEW YORK CENTRAL RAIL ROAD COMPANY,

Which shall continue for the term of five hundred years from its commencement.

From Agreement between the Albany and Schenectady Rail Road, the Schenectady and Troy Rail Road, [and others] whereby said companies are consolidated into one corporation, under the name of "The New York Central Rail Road Company...." Albany, Joel Munsell, 1853.

Railroads in the Civil War

1861-1865. "...The recent war, whilst it taxed to the utmost, the capacities of the railroads in the United States, interposed obstructions very naturally to the opening of new routes, and suspended action upon many that were in the course of construction....

The Southern roads were worked with prodigious energy, and without them the war, on the scale that it was conducted, would have been impracticable. But two or three short routes were opened during the pressure of hostilities, and, in the conflict of the armies, most of the roads were more or less torn up or destroyed, and all of them came out of the struggle with greatly impaired means, with deficient tracks and worn out iron, with exhaustion of locomotives and cars. The wonder is, that the roads were enabled to work so long, cut off as the country was from all external means of repair and supply. The energy which kept them at work amid the Herculean discouragements that existed, is one of the miracles of the times. That energy was not exhausted with the war. It is manifesting itself in a thousand forms today, and from Virginia to Texas every road is being rapidly restored, and repaying the efforts of the Companies with the most splendid results...."

DeBow's review, vol. 1, March, 1866.

A few chapters on Pacific Railroads.

1848. "...I believe it is pretty generally known that I have devoted four years exclusively to the subject of a railroad from Lake Michigan to the Pacific Ocean... That I have explored and examined more than 800 miles of the route... and that a great part of the country over which I passed had never before been traversed except by savages...and now Mr. Benton says that my 'surveys have extended only from one end of this Capitol to the other.'...

I have shown to the people the plan and simple way this great work might be accomplished; have explained its great importance and vast results; and now it appears that there are members of Congress, who have not even read the bill. It is evident Mr. Benton has not from his violent opposition to that which is not proposed in the bill...

...With the failure of this bill, Oregon, California, and all the North Pacific Coast, must be a separate, independent nation. But could our interests be united by drawing the commerce and intercourse of Europe with Asia across our continent, dividing the vast benefits, participating in each other's local advantages and position, then a union would have been formed, which time would but strengthen and make more lasting..."

Asa Whitney, in a letter to Freeman Hunt, Editor of Hunt's Merchants' Magazine, October 15, 1848.

1855. "...A comparison of the results stated above, and of those exhibited in the tables referred to, conclusively shows that the route of the 32d parallel is, of those surveyed, 'the most practicable and economical route for a railroad from the Mississippi river to the Pacific ocean.'

This is the shortest route; and not only is its estimated cost less than a third than that of any other of the lines, but the character of the work required is such that it can be executed in a vastly shorter period. It is obvious that a road on any of these routes, with the exception perhaps of the 47th parallel, must be built continuously from the two extremities, and an obstacle that arrests its progress at any point defers the commencement of all the work in advance. The tunnels and much of the other work on the more northerly routes in the most desolate regions are such as could not be commenced until a road was constructed up to those points, and would then require a long period for their completion.

On the southernmost route, on the contrary, the progress of the work will be regulated chiefly by the speed with which cross-ties and rails can be delivered and laid, the nature of the country being such that throughout the whole line the road-bed can easily be prepared in advance of the superstructure. The few difficult points, such as the Pass of the Guadalupe and Hueco mountains, and the passes between the Rio Grande and Gila, would delay the work but an inconsiderable period.

This peculiarity of the ground presents another advantage in the fact that temporary tracks could be laid upon the natural surface of the earth to almost any extent, to serve for the transportation of materials and supplies.

The climate on this route is such as to cause less interruption to the work than on any other route.

Not only is this the shortest and least costly route to the Pacific, but it is the shortest and cheapest route to San Francisco, the greatest commercial city on our western coast; while the aggregate length of railroad lines connecting it at its eastern terminus with the Atlantic and Gulf seaports is less than the aggregate connection with any other route. . . . ."

Jefferson Davis, secretary of war, in Report of the Secretary of War communicating the several Pacific railroad explorations... 33d Cong., 1st session, H. Doc. 129.

1862. "...The last action of the House on the Pacific Railroad, was upon a motion of Mr. Sargent, to print 2,500 copies of the bill, which was agreed to.

The bill was signed by the President, and became a law on July 1st, 1862.

The bill having passed, I immediately prepared a map and designation of our route as required by Section 7 of the act, which says that "Whenever said companies shall designate the general route of their road, and file a map of the same in the office of the Secretary of the Interior, he shall cause the lands for fifteen miles on each side of said route or routes, to be withdrawn from private enterprise, emption and sale."....

I left Washington, Friday, June 27th, for New York, for the purpose of making necessary inquiries, and securing provisional contracts, if possible, for the Iron Equipment, etc., for the first fifty miles of our road. My desire being to make such contracts, if possible, for Government Bonds—and so that, if necessary, the first fifty miles could be completed by the fall of 1863.

Finding that Iron was rapidly advancing in price, and mills beginning to refuse to take orders, ... I placed matters in the hands of G. T. M. Davis, Esq., with instructions to immediately close some kind of arrangement with iron, locomotive and car men, upon the best terms he could get, before further advances took place.....

Mr. Davis succeeded in making a contract with Norris & Co., of Philadelphia, for eight locomotives, deliverable in January, to be paid for entirely in Government bonds, when issued.....

Having successfully accomplished the objects of my mission, I sailed from New York ...July 21, 1862, arriving in San Francisco, August 17, 1862.

Theodore D. Judah, in Report of the Chief Engineer of the Central Pacific Railroad Co. of Cal., on his operations in the Atlantic States, September 1, 1862.

1869. "The administration of President Grant and the sessions of the Forty-first Congress opened on the 4th of March, 1869. The houses of Congress remained in session only until the 9th of April...During those twenty-six working-days, no less than twenty-three bills were introduced into the Senate, providing for the construction of 14,050 miles of railway which unaided private capital could not be induced to build, and appropriating to the furtherance of the work 224,245,520 acres of the national domain, or nearly one-half of the whole amount of territory now remaining unoccupied... In certain cases liberal subsidies in money also were asked, and, under the provisions of three bills alone, the government was to become responsible for nearly seven millions of annual interest on more than one hundred and fifteen millions of capital indebtedness... ..

...Bills which have 'money in them' are the bane of representative government. It is currently supposed—whether correctly or not is of no consequence, so far as the effect on legislation is concerned—that the constructors of the Union Pacific Railway, and the stockholders of the Credit Mobilier made on the 'job,' if it may be so called, some seven hundred and fifty per cent on the amount of capital embarked. Doubtless the persons severally interested in the enactment by Congress of the twenty-three bills introduced into the Senate between the 5th of March and the 9th of April last are fully persuaded, each, that the passage of his particular bill involves for him a no less profitable return

The people of this country should have obtained two things, almost equally valuable, from the completion of the Pacific Railway,—the first a trans-continental road, and the second, the wisdom which comes from dearly purchased experience. Very likely the money cost of the Pacific Railway, great as it was, and lavish as the method of construction is understood to have been, was not excessive. The country demanded the thoroughfare, and was willing to pay for it; it made its own contract for the work of construction, and yet retains the power to enforce the terms of that contract. It has therefore little right to complain if the daring and energetic men, who risked their whole fortunes in the work of forcing through a novel enterprise to a splendid success, now claim to the uttermost farthing the great stakes for which they played so well. At the same time, after the lesson has been paid for, it should not be forgotten.

In a moral and political point of view, there is nothing more dangerous than this fostering of special interests; for the legislation which effects it inevitably becomes a precedent, to the application of which there is no limit.....

..The United States government may now fairly be considered as committed to the policy of lending encouragement, through direct material aid, to an indefinite expansion of railways. It is many years since the precedent was established of granting tracts of public land in aid of railroad construction. While the demands of the companies were limited to this, little objection could be made to them...The assistance asked for was not, however, long confined within these limits. In the case of the Pacific Railway, for the first time, a money as well as a land subsidy was granted to a railroad enterprise. The record of the first few weeks of the Forty-First Congress gives the country, if it only heeds it, a very clear intimation of the use which is to be made of the precedent thus established....."

Charles Francis Adams, in Railway problems in 1869, North American Review, v. 110: 116-150; January, 1870

James J Hill prophesies:—

1907. " ..The country must have, as rapidly as it can be built, additional tracks and terminal facilities, of which it stands in such need today. Suppose that only twenty-five per cent additional track with necessary terminals and equipment is to be built during the next five years; for with less the country cannot escape severe distress and business depression, cannot conduct promptly the volume of business even now in sight.. ..

No practical man would accept a contract for furnishing the facilities required, including additional equipment and terminal facilities, for less than $75,000 per mile...The new work, then, would amount to $5,500,000,000 in round numbers, or a yearly average of $1,100,000,000. That is the sum which should be spent before the commerce of the country can be moved properly..." [Mr. Hill estimated that it would be necessary to build 11,000 miles of track each year for five years.]

James J. Hill in letter to the Governor of Minnesota, dated January 14, 1907.

Government control.

1917. "...And whereas it has now become necessary in the national defense to take possession and assume control of certain systems of transportation and to utilize the same, to the exclusion, as far as may

be necessary, of other than war traffic thereon, for the transportation of troops, war material, and equipment therefor, and for other needful and desirable purposes connected with the prosecution of the war;

Now, therefore, I, Woodrow Wilson, President of the United States, under and by virtue of the powers vested in me, by the foregoing resolutions and statute...do hereby ...take possession and assume control at 12 o'clock noon on the 28th day of December, 1917, of each and every system of transportation and the appurtenances thereof located wholly or in part within the boundaries of the continental United States..."

U. S. President, Proclamation on December 26, 1917.

One suggestion as to railroads of the future:—

1919. "...The grouping or consolidation of the railroads in the United States, within a reasonable time, into a limited number, possibly twenty to thirty, strong competing systems, is essential; because railroad rates must be the same for similar service, whether performed by the weak, necessitous railroad, or by the strong and prosperous one. It is in the interest of the public that railroad charges shall be neither so high as to cause the strong roads to profit unduly, nor so low as to force the weak lines, upon which large sections of the country may be vitally dependent, into bankruptcy or into such a permanently enfeebled condition as to prevent them from serving the public adequately and effectively. All sections of the country ought in the future to be served by railroad systems managed by companies strong enough to serve the public with progressive efficiency and economy.

It will be necessary for the government to return the railroads to the companies from which they were taken, but the obstacles to the grouping or consolidation of railroads, under conditions approved by the government, should be removed, and provision should be made for bringing all of the railroads in the country within a reasonable time into such a number of strong competing systems as it may be found desirable or necessary to perpetuate in order to secure for each principal district of the country the service of more than one system. The grouping or consolidation should be about the present strong systems, that is along commercial lines, and not by arbitrary territorial sub-divisions of the country...."

From The Conference plan for remedial railroad legislation, An Explanatory statement by Harry A. Wheeler, chairman, National transportation conference, Washington, D C.

Railways—Use in War

1833.

"The first definite proposals for the use of railways for strategical purposes were advanced, as early as 1833, by Friedrich Wilhelm Harkort, a Westphalian worthy who came to be better known in his native land as 'Der alte Harkort.' . . Harkort's proposals gave rise to much vigorous controversy in Germany. The official classes condemned as 'nonsensical fancies' his ideas, not only as to the usefulness of railways for the conveyance of troops, but, also, as to the utility of railways for any practical purposes whatever, and contemporary newspapers and periodicals, in turn, made him the butt of their ridicule . . ."

E A. PRATT Rise of rail power in war and conquest. ..

1847.

"In 1847 one of the leading military writers in Germany published a pamphlet in which he sought to prove that the best-organized railway could not carry 10,000 infantry a distance equal to sixty English miles in twenty-four hours. As for the conveyance of Cavalry and Artillery by train, he declared that this would be sheer impossibility."

IBID

1861-1865.

"What, in effect, the Civil War in American did in furthering the development of the rail-power principle in warfare was to show that, by the use of railways, (1) the fighting power of armies is increased; (2) strategical advantages unattainable but for the early arrival of reinforcements at threatened points may be assured; and (3) expeditions may be undertaken at distances from the base of supplies which would be prohibitive but for the control of lines of railway communication."

IBID.

1879.

"It is now upwards of a quarter of a century since the chairman of the Sind railway commenced to broach the idea of connecting the Khyber and Bolan passes with the railway system of India. For more than a quarter of a century he has unsparingly advocated these views. . . . . Had the views so persistently advocated by Mr. Andrew, and so repeatedly brought forward by us, been adopted at the commencement of the struggle last October, as we then ventured to insist upon, vast sums would have been spared in the hire of transport, and we should have been spared the ignominy of feeling that a British Army, nominally on active service, has occupied five weeks in covering less than seventy miles."

The TIMES, London, Oct. 13, 1879.

Note: It has been stated that the number of camels employed during the expeditions of 1878-1880 for transport purposes in de--

fault of better rail communication, was so great as almost to exhaust the supply of the frontier provinces of Sind and Punjab, while from 30,000 to 40,000 of them died owing to the excessive toils and trials of the work they were required to perform, the financial loss resulting therefrom to the Treasury being estimated at £200,000

E. A. PRATT: Rise of rail power in war and conquest.

"Railways have become, in our time, one of the most essential instruments for the conduct of war. The transport of large bodies of troops to a given point is an extremely complicated and comprehensive piece of work, to which continuous attention must be paid. Every fresh railway junction makes a difference, while, although we may not want to make use of every railway line that has been constructed, we may still want to make use of the whole of the rolling stock that is available . . ."

VON MOLTKE to the German Herrenhaus, Dec. 18, 1879.

"Our Great General Staff [of the German Army] is so much persuaded of the advantages to be derived from obtaining the initiative at the outset of a war that it prefers to construct railways rather than forts. An additional railway, crossing the whole country, makes a difference of two days in the assembling of the army, and advances operations proportionately . . ."

VON MOLTKE to the Reichstag, 1879.

1899-1902.

"In one way or another the South African War . . . was concerned in many of the most complicated of the problems that arise in connection with the use of railways for military purposes . . . It confirmed under especially remarkable conditions a fact which the American War of Secession had already established, namely that even single lines of railway, passing through country occupied or belonging to the enemy, may allow of campaigns being conducted at such distances from the base of supplies, as but for this means of communication, would render war impracticable.

It offered further evidence as to the possibility, in favorable circumstances, of employing railways for the carrying out of important tactical movements

It re-established the essential need of organization for the attainment of efficiency in military transport and especially in so far as such organization deals with questions of control and co-ordination of the military and technical elements.

It placed on a recognized and clearly defined basis the uses of armoured trains and the best methods to be adopted for their construction and operation.

It showed still more clearly, perhaps, than any previous war had done, the useful and beneficent purposes served by ambulance and hospital trains, whether constructed for the purpose or adapted from existing railway stock.

It proved, that however apparently insecure a line of rail communication may be, and however active and destructive the attacks made on it by a pertinaceous enemy, yet, with a strong and well organized force of Railway Troops following close on the advancing army, and supplemented by an efficient system of line protection, repairs and construction can be carried out with such speed that comparatively little material delay will be caused, the final result of the campaign will not necessarily be affected, and the value of rail-power as an instrument of war will suffer no actual reduction."

E. A. PRATT: Rise of rail power in war war and conquest.

1914.

"The Battle of the Marne was won by the railways of France . . . . This is a railway war."

Marshal JOFFRE.

1919.

". . .The prompt, efficient and safe movement of troops has been a first consideration throughout and nothing has been permitted to interfere with it. To May 31st, 1919, there have been moved a total of 12,976,347 men, involving the equivalent of nearly six billion miles of travel by one passenger. The average is 519,054 men per month; the monthly maximum was reached in July, 1918, when 1,147,013 men were moved . .

A total of 261,125 passenger cars (including sleeping cars), 21,181 baggage cars and 24,165 special freight cars for troop impedimenta, total 306,471 cars have been used.

During the period there were but seventeen train accidents involving either death or injury of enlisted men . . ."

TROOP MOVEMENT SECTION, USRA.

"...Without railroads, the United States to-day would, in all probability, not be radically different from the United States of a hundred years ago. All the large towns and cities would still be clustered upon the coast and waterways, and back of them would still rest many square miles of undeveloped country; the nation would have remained a sprawling, helpless thing, weakened by its very size, and subject both to internal conflict and to attacks of foreign invaders. It has been repeatedly said that if there had been a thorough railroad development in the South during the fifties, there would have been no Civil War....."

Edward Hungerford, in the Modern Railroad.

"...Railroading is the art of overcrowding the law of gravitation."

James J. Hill

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The material for this issue was gathered under the direction of Mr. Richard H. Johnston, Librarian of the Bureau of Railway Economics and a former President of the Special Libraries Association We are indebted to his good judgment in the selection of contributors and to his loyalty to the Association in taking the time out of a busy career to secure the articles.

EDITORIAL

Some Unconsidered Features of the Enlarged Program of the A. L. A.

Every librarian should read and study the report of the Enlarged Program Committee of the A. L. A. It is a program ostensibly outlining the aims and supposedly expressing the views of all librarians, not merely those of any particular group or section. Nothing could therefore have a larger outlook or purpose.

The program as announced at present is tentative. The avowed object of the committee is to secure criticism of this report with the hope of improving it and making it the most worthy product of modern librarianship. Those on the Enlarged Program Committee have worked hard to evolve a satisfactory program. Of that there can be no doubt. To be sure they were handicapped, but their handicap was one from which any other committee or person similarly chosen could not have been free. To look at the whole of library work was and is a large task. When the committee of the National Education Association charged with a similar task as the Committee on Enlarged Program was appointed its work was defined in similar terms except that its field was to be education. But there was this significant difference—the committee of the N. E. A. was so constituted that every important section of educational endeavor was represented by at least one expert. This was not the case with the A. L. A. Its Committee on Enlarged Program is a committee of five, a committee chosen and eminently capable of looking at the whole of library work, *were that work composed only of public library work.* But this is *not* the case. Therefore we cannot say that the Enlarged Program is representative of American librarianship. Whether it is representative of public libraries is for the public librarians to determine. Frankly we doubt whether it is. The wide-spread criticism that has come from many quarters only bears this out

The report lacks the large view which might properly be expected in such a program. It is a slap-jack affair and bears every evidence of haste and patchwork The several items in the program bear no relation to each other. They indicate an isolated conception of library work; certainly they do not produce the broad view or the large conception which we have a right to expect in a document that pretends to present an enlarged view and a broader program as compared with present or past activities. If this is to be an enlarged program then it must rest on a broader basis than any present program; and moreover its viewpoint must represent an enlarged viewpoint.

We do not intimate that the committee has not done its best. But it was so constituted that its viewpoint never was and never could be that of the whole of American librarianship.

Special librarians from the first made this clear. As far back as June, 1919, we indicated the danger in the present methods of

The American Library Association and the menace to the other existing library associations by an endowment for the A. L. A. The following principle then started may bear repetition· "If the American Library Association is to be regarded by all of us as representative of all librarians in the United States then it must include in its counsels and in its activities representatives of the special libraries." In the same way the matter was made clear to the Committee on Enlarged Program. The Committee stated from the first that it was open-minded. Certainly it was open-eared; it listened to all that was said. But its answer was evasive and such that the Executive Board of the Special Libraries Association, considering the welfare of the special libraries, could not, notwithstanding its eagerness to support any large library program, accept. Hence, more correspondence, more speechmaking, more parleys. And curiously enough, those who were appointed by the Committee on Enlarged Program to see whether an understanding with the Special Libraries Association could not be effected,—each, after hearing our case, stated definitely his complete accord with our attitude. Could anything be more convincing of the justice of our position? But the strategic moves still continue. Every day brings new promises.

Meanwhile let us look at the Enlarged Program itself. One of the sections provides for the raising of a fund of $25,000 for the affiliated associations. The affiliated associations are the National Association of State Libraries, the American Association of Law Libraries, and our own, the Special Libraries Association. To our best knowledge not one of these was consulted regarding this $25,000 fund. Not a single one was asked whether a dollar was needed by it, whether $25,000 was sufficient, too much or too little; not a single one at the time the decision was made had any sort of plan for the use of this money To incorporate such an item is to perpetrate little short of a *mistake;* certainly we should like to know what any fair-minded librarian would call it.

Yet it is with such a program that we are asked to go before the public. Never to our knowledge in the history of American institutions has an association gone out to raise funds for another association without the knowledge or consent of that association. Shall the A. L. A. be the first to so go down? Is this the type of enlarged program to which we are to be led? Surely here is something to consider.

As we look over the whole program and see the various items we hesitate whether to pity or condemn. Here we have a country of over 100,000,000 persons. How many of this multitude does the Enlarged Program plan to serve? A paltry 9000 in light houses; another 6000 on coast guard cutters—and factories owned by the Government, about two-score in number. Here is a whole country to serve, millions that might be reached, and yet we ask $2,000,000 to serve a handfull.

We make no comment on the industrial service which the A L A. is in a position to render. We make no comment on the various other items which have tentatively been incorporated into this program These may well be considered by every librarian.

But this we can say safely The Enlarged Program in its present stage represents neither broad view nor concrete plan. It has little in it to command support, and that little is more than negated by the items which deserve outright condemnation. The views of our own association are not represented in this program despite the fact that the program would appear so to indicate. The Committee is certain to fail not only because its work lacks breadth of appeal but also because it has not the support of the majority of librarians, the special librarians among them. And no library program that lacks the support of the business libraries of the country can hope to secure the required funds from business men who are always the great givers.

Our own position has been made sufficiently clear in these columns and to the Committee on Enlarged Program. We stand ready to co-operate on a basis of fairness and goodwill. But the club and juggernaut do not move us. Every well-directed effort of mankind gives proof that right will triumph. We have never doubted our position. We know that we are right and we know the right will win. And while on the one side we are marking time, on the other we are going forward with our own program.

J. H. FRIEDEL.

Arthur D. Little, Inc., Chemists and Chemical Engineers, Cambridge, Mass. through its Information Department, is planning a series of Bibliographic Studies, to be circulated among the Public, University and Special Libraries of the United States, and the firms and individuals interested in the various studies Those in course of preparation are: Chemical Warfare; Alcohol from Waste Sulfite Liquors; Industrial Research; The Automobile and Tractor at the Front; The Electric Furnace; Industrial Laboratories; Molasses, The Chemical Action of Light; Woods & Fibers used as Paper Making Materials.

The General Motors Corporation has started a special library of its own and has selected Mr. Frank K. Walter, Vice-Director of the New York State Library School to be its librarian.

List of References on the Right to Strike

COMPILED BY MARY B. LADD

Cataloguer, Bureau of Railway Economics Library

This list has been compiled from material in the Library of Congress, in the Library of the Department of Labor and in the Library of the Bureau of Railway Economics. Key letters (LC, Lab, B) have been employed as an indication of where the items in the list have been seen, but their use should not be taken to mean an attempt to indicate the entire contents of any of the libraries on this subject. The key letters are not employed in the case of articles which have appeared in the general periodicals. Library of Congress printed card numbers are furnished when possible.

Entries are grouped by year, alphabetically under each year, and an index of names follows the list.

Any material which may have been called forth by the Indianapolis injunction in the case of the striking coal miners was not available when the list was compiled Nov. 7, 1919.

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Time to call a halt to organized labor.
(Outlook, v. 123: 206-08; Oct. 1, 1919)
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Springfield Republican [Editorial]
[Anti-strike provisions and private ownership]
(Springfield Republican, Sept. 25, 1919, p. 8) B, LC.

Taft, William Howard.
When thugs had saturnalia in Boston; effect upon nation's behavior defined at nonpartisan meeting in Malden armory last evening.
(Boston transcript, Oct. 31, 1919, p. 4) B, LC.
Rights and limitations of labor—when a strike is illegal.

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Mr. J. H. Thomas at Derby. The story of the negotiations. Strikers and the state . . . .
(Railway review, Oct. 24, 1919, p. 2-3) B.
"To those people who are today talking about preventing strikes and suggesting some legislation must be introduced to make strikes illegal I will say they are simply playing with fire. . . . . The power and the right to strike is our only bargaining power, and we are going to retain it up to the end of our days": p. 3, col. 3.

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The Condensed Chemical Dictionary

One of the most timely and valuable reference aids for both chemists and general users is the new "Condensed Dictionary" recently published by the Chemical Catalog Co of New York. This is the first work of its kind in the English language and fills a long-felt need for a handy compendium giving in condensed form the properties and general characteristics of important chemical substances. This book should prove of special value for all reference and technical libraries. The editors have in one volume collected and condensed the mass of information scattered through literature, on the important chemicals and chemical products used in commerce or of commercial importance to manufacturers. It comprises an alphabetical list of chemical substances giving definition, formula, color, melting and boiling points, brief description of preparation and uses, properties and composition of commercial grades, containers, fire hazards and shipping regulations. In fact it is "a reference volume for all requiring quick access to a large amount of essential data regarding chemicals and other substances used in manufacturing and laboratory work." It is copiously supplied with cross-references. Important trade and proprietary names are listed and those products which are made in America are designated by an asterisk.

The typography, paper and general "make-up" of the book are excellent. It might, however, have well been bound in a material less liable to become soiled or discolored thru laboratory usage.

The information given regarding the derivation and manufacture of the substances listed is necessarily brief, and in many cases it would greatly add to the value of the work to have several references to sources giving fuller information on these substances. The possibilities of a work of this kind are almost unlimited.

As a valuable handbook and time saver for the industrial and laboratory chemist and reference librarian it is a most welcomed publication and should find a place on the shelves of all technical libraries.

Illustrative of the information given, we find the following under Saccharin:

Saccharin* (Benzoylsulfohic imide; Bensosulfinide; *Neosaccharin*; Gluside; *Saccharol*; Glycosine; Saxin; Sykose; Glusimide; Garantose; Glusidum; Glycophenol; Saccharinol; Sacchadinose; Ortho-benzoic sulfimide). $C_6H_4COSO_2NH$.

Color and properties: White, crystalline powder; exceedingly sweet taste (500 times that of cane-sugar).

Constants: Melting point: Decomposes at 220°C.

Soluble in amyl acetate, ethyl acetate, benzol and alcohol; slightly soluble in water.

Derivation: A mixture of toluenesulfonic acids is converted into the sodium salt, then distilled with phosphorus trichloride and chlorine to obtain the ortho-compound, which, by means of ammonia is converted into ortho-toluenesulfamide. This is oxidized with permanganate to the alkali salt of ortho-benzenesulfaminic acid and the latter treated with acid and saccharin crystallized out

Method of purification: Recrystallization.

Grades: Commercial; U. S. P.; B. P.

Containers: Tins; glass bottles.

Uses: Manufacture of sirups; medicine; substitute for sugar, particularly in diabetes; sweetening champagne, oils, soft drinks, etc.

Fire hazard: None.

Railroad shipping regulations: None.

E. D. GREENMAN.

The Publications Committee of Library Employees Union 15590 (463 Central Park West, New York City) has issued as Pamphlet No. 1, *A Study Help on Industrial Democracy*. The literature cited covers the years 1846 to 1919; short descriptive notes accompany the titles.

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